

**NEW YACHT FOR THE KHEWIVE OF EGYPT.**

Mr. John Fowler, C. E., recently instructed Mr. J. S. White, of Cowes, England, to build a yacht for the personal service of the Khedive of Egypt. The instructions were to provide a launch which should be a good sea boat, stiff in the water, and of a mean speed of at least 10 miles per hour on a continuous run at sea. These conditions have been admirably fulfilled in the launch under notice. Her sea-going qualities were thoroughly tested during her run from Cowes to London in the face of a strong easterly gale, and her speed in fair weather was easily maintained at one mile per hour above the contract rate for any desired length of time.

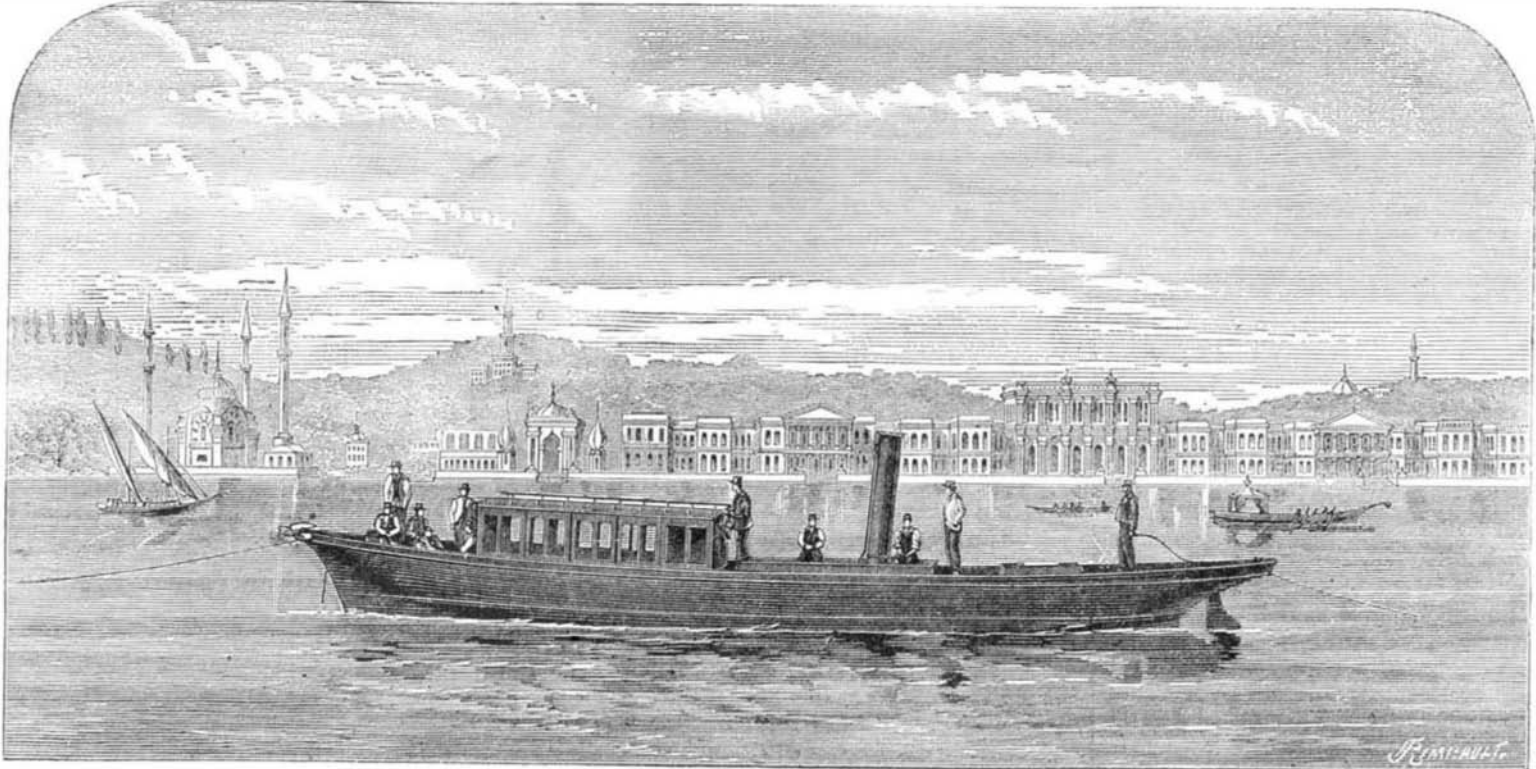
**The Phylloxera.**

We recently published the terms of the reward of \$60,000, offered by the French Government, for a remedy for this extraordinary vine pest. At a recent *séance* of the Paris Academy, no fewer than eleven communications were received relating to the destruction of the phylloxera. A letter from a vineyard proprietor proposed sowing tobacco seed among the vines: he had found this an effectual remedy, in the case of artichokes, for destroying an aphid which attacked the roots. Hemp and *datura stramonium* were proposed as preferable to tobacco, on account of fiscal restrictions on the latter. One suggestion was to destroy the insect by electri-

**Phosphorescence of Putrified Animal Matters.**

Phosphorus exists in animal flesh in the state of alkaline or earthy phosphates, and also as one of the elements in protagon. The phosphorescence and alliaceous odor, sometimes observed during the putrefaction of flesh, are due to the formation and subsequent decomposition of sulphur phosphide. This substance, formed from the sulphur of the fibrin and the phosphorus of the protagon, is spontaneously inflammable in presence of oxygen, producing hydrogen sulphide and phosphorus or phosphoric acid.

Muscular flesh, to which  $\frac{1}{1000}$  part of its weight of calcium phosphate was added, and which was kept at the ordi-



**STEAM YACHT FOR THE KHEWIVE OF EGYPT)**

The following are a few of the leading dimensions: Length, 50 feet; breadth, 10 feet; draft forward, 2 feet 10 inches; draft aft, 3 feet 6 inches; displacement, 11 tons; screw (four bladed), diameter, 3 feet 6 inches, pitch, 3 feet 3 inches to 4 feet 6 inches; cylinders, diameter, 7 $\frac{1}{2}$  inches, stroke, 6 inches; grate surface, 5.5 square feet; heating, 215 square feet.

At the speed of 11.08 miles (9.58 knots) per hour, the number of revolutions was 268, and the boiler pressure 76 lbs. per square inch. With a mean effective pressure in the cylinders equal to 75 per cent of that in the boiler, the power developed would be 43.4 indicated horse power, an exceedingly good result for so small a boat.

The launch is built entirely of teak and mahogany, diagonally, coppered and copper fastened, and the interior fittings are most luxuriously carried out in white satin and gold. Even the awning is profusely ornamented with gold braid; indeed, the instructions generally were to make the boat in every detail as perfect as possible, and that no legitimate expense need be spared to attain that end.

The engines were constructed for Mr. White by Messrs. G. E. Bellis & Co., of Birmingham, and they behaved admirably during the stormy run from Cowes to London, when their failure but for a quarter of an hour would, at times, have inevitably entailed the total destruction of Mr. White's very perfect launch and of the lives of those navigating her.—*Engineering.*

**A Tripod Boat.**

A novel boat velocipede was lately tried on the Allegheny river at Pittsburgh. The machine consisted of three floats, each three feet long by 15 inches diameter, two of the floats placed side by side, a short distance apart; the other a steering float placed in front, like the front wheel of a velocipede, and made movable. A seat on slender rods rising from the two central floats supported the operator. Between the two floats were a pair of 8 inch paddle wheels worked by cranks from the driver's seat, where the front steering float was also operated. This novel machine, when set in motion, carried its inventor safely across the river at the speed of a slow walk. The paddles are evidently too small. A contrivance of similar character was suggested some time ago, we believe by W. J. Allen, of Grand Rapids, Mich.

At the last advices, Coggia's comet was brilliantly visible in Australia.

trical discharges. A committee of the Linnæan Society of Bordeaux have pronounced, as the result of their researches, that the phylloxera is not the cause of the disease, but an effect of an organic malady attributable to five causes, which they specify (exhaustion of soil, inclement seasons, bad choice of stocks, and bad treatment, etc.). They state that while phylloxera is an effect, it may aid in deteriorating the vine.

A correspondent of the SCIENTIFIC AMERICAN declares that the liberal use of cow dung manure is a sure cure for the phylloxera on vines. He wants the editors to bring it to the attention of the French authorities, and offers to give them one half of the reward, namely, \$30,000, when the whole sum is paid over. We accordingly take pleasure in making the remedy known to the Paris Academy and the

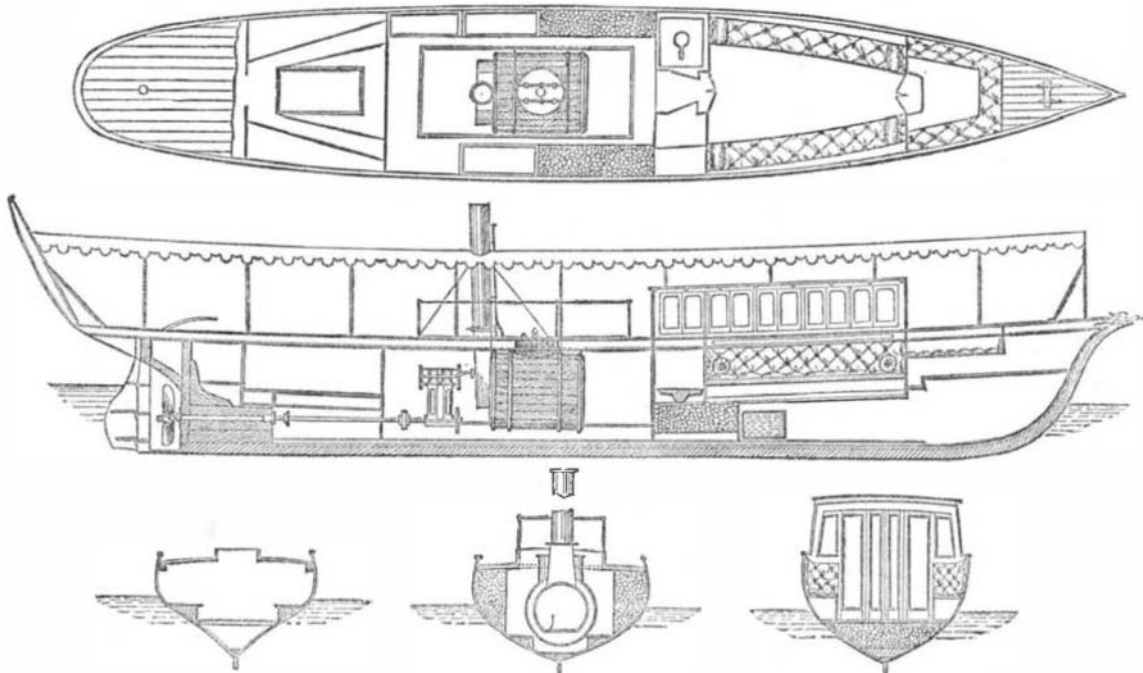
nary temperature, had a very fetid odor by the third day, while a sample not treated with calcium phosphate did not become putrid until the sixth day. As all ordinary waters contain calcium and magnesium salts, it is desirable that they should not be used in the cleansing of ulcers, etc., for, by the combination of these salts with the alkaline phosphates of the flesh, active agents of decomposition are produced.—*J. Lefort.*

**Otto of Roses.**

The *Moniteur Industriel Belge*, in an interesting article on this costly perfume, says that the manufacture is largely carried on in the valley of Kesanlik, Roumelia, the annual production of the rose farms of which amount to 4,400 pounds of the otto per year. As it requires about 130,000 roses, weighing some 57 pounds, to make an ounce of the oil, some idea of the extent of the plantations may be formed from the above given total.

The flowers are gathered in the middle of May, and the harvest continues for three weeks. The blossoms collected each day are at once worked, in order that none of the odor may be lost. The process consists in distilling them in water and then causing the water alone to undergo distillation, when the oil is skimmed from the surface. The labor is principally done by women and children, at wages of about ten cents per day.

The otto is always adulterated, before transmission to market, with one third or one fifth its quantity of geranium oil.



**PLAN AND SECTION OF THE KHEWIVE'S STEAM YACHT.**

French Government. Our correspondent avers that the effect of the liberal use of cow dung manure is to give new life and stimulus to the vine, and thus put a prompt end to the phylloxera and other bad conditions. The researches of the Linnæan Society of Bordeaux appear to confirm the theory of the SCIENTIFIC AMERICAN's correspondent; and should the remedy proposed be adopted in France as effective, we request the French authorities to remit the amount of the reward to this office, without any formalities.

**LUMINOUS APPARITIONS OR FALSE LIGHTS.**—These are not due, as was long supposed, to the products of animal or vegetable decomposition, but are caused by insects which possess organs that become luminous at the time of their sexual congress. It is now well known that the phosphorescence of the sea is due to the presence of immense numbers of microscopic animals.—*Journal of the Chemical Society.*

A TERRIBLE disaster occurred in Fall River, Mass., on the 19th of September, in the burning of a cotton cloth manufactory known as Granite Mill No. 1. The building was a large granite structure, some 368 feet in length, and five and a half stories in height, containing the usual spinning and other machinery. About 350 operatives were employed, a large proportion of whom consisted of girls and children. Twenty were killed and thirty wounded. The mill was badly provided in respect to fire-extinguishing apparatus and means of escape.

A CORRESPONDENT, Mr. L. P. Alden, of Quincy Mich. states that the striped potato bug was for many years common in Southern Illinois, and that its vesicatory powers were well known.